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EXAMINER	
SAUNDERS JR, JOSEPH	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,577	TAZINE ET AL.	
	Examiner	Art Unit	
	Joseph Saunders	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the communications filed April 23, 2009.

Claims 1 – 27 are currently pending and considered below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 22 and 25 recites the limitation "the detected number", however a number was not previously detected and therefore, there is insufficient antecedent basis for this limitation in the claim.

4. Claim 26 recites, “method according to claim 20, wherein another audio track was a representative of the first cluster before the new audio track was added, and said first audio track being representative of the first cluster is different from the other audio track that was representative of the first cluster before the new audio track was added,” however claim 1 previously recited a “first audio track as being representative for the second cluster,” and claim 20 previously recited “associating said new audio extract of the second audio track as representative of the first cluster,” and therefore “said first audio track" was not previously claimed as "being representative of the first cluster".

Appropriate correction and clarification is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 4 – 10, 12, 13, 16 – 20, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador (US 7,149,755 B2), hereinafter Obrador, In view of Khan et al. (US 7,277,766), hereinafter Khan, and Liou et al. (US 6,278,446), hereinafter Liou.

Claim 1: Obrador discloses a method for creating or accessing a menu for audio content stored in a storage means, the content consisting of audio tracks, and the menu containing representations of said audio tracks, the method comprising:

classifying (“organized”) the audio tracks (“As used herein, the term "media object" refers broadly to any form of digital content, including text, audio, graphics, animated graphics and full-motion video," Column 3 Lines 55 – 58 also “digital content may be compressed using a compression format that is selected based upon the digital content type (e.g., an MP3 or a WMA compression format for audio works," Column 4 Lines 3 – 6) into groups or clusters (see “Browsing a Media Object Cluster Hierarchy," Column 9), wherein said classification is performed according to characteristic parameters of said audio tracks (“The metadata similarity may correspond to low-level features (e.g., motion activity, texture or color content, and audio content) or high-level

features (e.g., meta data, such as keywords and names; objects, such as persons, places and structures; and time-related information, such as playback length and media object creation date). One or more known media object processing techniques (e.g., pattern recognition techniques, voice recognition techniques," Column 9 Lines 53 – 67);

detecting addition of a new audio track ("As these collection grow in number and diversity, individuals and organizations increasingly will require systems and methods for organizing and browsing the digital content of their collections," Column 1 Lines 18 – 21, and therefore the system must detect new audio tracks in order to organize the growing collection.);

determining characteristic parameters of the new audio track ("metadata similarity criteria").

Obrador does not disclose wherein said characteristic parameters comprise physical features, perceptual features, and psychological features, wherein, physical features comprise one or more of spectral centroid, short-time energy, or short-time average zero-crossing, and wherein perceptual features comprise one or more of rhythm and tonality. Obrador does state with reference to browsing and organizing media, "In some embodiments, the relevance criteria used to select the media objects that will be presented contemporaneously with the selected media file may relate to a selected metadata similarity between media objects and the selected media file. The metadata similarity may correspond to low-level features (e.g., motion activity, texture or color content, and audio content) or high-level features (e.g., meta data, such as keywords and names; objects, such as persons, places and structures; and time-related

information, such as playback length and media object creation date). One or more known media object processing techniques (e.g., pattern recognition techniques, voice recognition techniques, color histogram-based techniques, and automatic pan/zoom motion characterization processing techniques) may be used to compare media objects to the selected media file in accordance with the selected metadata similarity criterion," Column 9 Lines 48 – 67. Khan discloses a method and system for analyzing digital audio files. Khan teaches, "One advantage of the foregoing aspects of the present invention is that unique audio signatures may be assigned to audio files. Also various attributes may be tagged to audio files. The present invention can generate a customized playlist for a user based upon audio file content and the attached attributes. Hence making the music searching experience easy and customized," Column 3 Lines 24 – 30. "Some of the features that can be associated with the audio files are: (a) Emotional quality vector values that indicates whether an audio file content is Intense, Happy, Sad Mellow, Romantic, Heartbreaking, Aggressive or Upbeat. (b) Vocal vector values that indicates whether the audio file content includes a Sexy voice, a Smooth voice, a Powerful voice, a Great voice, or a Soulful voice. (c) Sound quality vector values that indicates whether the audio file content includes a strong beat, is simple, has a good groove, is fast, is speech like or emphasizes a melody. (d) Situational quality vector values that indicate whether the audio file content is good for a workout, a shopping mall, a dinner party, a dance party, slow dancing or studying. (e) Ensemble vector values indicating whether the audio file includes a female solo, male solo, female duet, male duet, mined duet, female group, male group or instrumental. (f) Genre vector

values that indicate whether the audio file content belongs to a plurality of genres including Alternative, Blues, County, Electronics/Dance, Folk, Gospel, Jazz, Latin, New Age, Rhythm and Blues (R and B), Soul, Rap, Hip-Hop, Reggae, Rock and others. (g) Instrument vectors that indicates whether the audio file content includes an acoustic guitar, electric guitar, bass, drum, harmonica, organ, piano, synthesizer, horn or saxophone," Column 7 Lines 19 – 45. Khan continues, "As discussed in step S901, certain features or parameters are extracted from an audio file signal. The features of this methodology are based on Short Time Fourier Transform (STFT) analysis," Column 8 Lines 56 – 60. The following STFT-based features may be extracted in step S901: Spectral Centroid, Spectral Rolloff, Spectral Flux, Peak Ratio, Subband energy vector, Subband flux, and Subband Energy Ratios, Column 9 Lines 12 – 56. Therefore, since Obrador suggests using various analysis techniques to capture various features of audio content, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the well known digital audio analysis techniques as disclosed by Khan to capture the various features of the digital audio content, thereby realizing the aforementioned advantages.

Obrador and Khan further disclose selecting automatically a first audio track as being a representative for the cluster, wherein the medoid of the cluster is selected ("For example, the media objects may be ordered in accordance with a selected context criterion, and the representative media object may correspond to the centroid or some other statistically-weighted average of a selected cluster of the ordered media objects," Obrador Column 10 Lines 35 – 39);

automatically generating a reproducible audio extract from said representative audio track; and associating said audio extract as representative of said cluster to a menu list ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Obrador Column 7 Lines 46 – 50 also "The media file and the media objects preferably are presented to the user through multimedia album page, which is a windows-based GUI that is displayed on a display monitor 42 (Fig. 2)," Obrador Column 8 Lines 3 – 7).

While Obrador and Khan must detect and determine characteristic parameters of new audio tracks in order to organize the growing collection, Obrador and Khan do not disclose the specifics of clustering the newly added track and therefore do not disclose the claimed determining that dissimilarity between the newly added track and existing clusters, according to said characteristic parameters used for classification, reaches at least a defined minimum level; upon said determining, automatically creating a new cluster; assigning the new audio track to said new cluster, classifying the audio tracks into the groups or clusters, including the second cluster, thus motivating one of ordinary skill in the art to look elsewhere for such a teaching in order to realize the invention.

Liou discloses a method for organization and browsing of media similar to Obrador. Liou further teaches in the art of clustering with regards to organizing media and in particular adding new media," The preferred shot [in the case of Obrador and Khan, the "shot" would refer to the "audio track"] grouping method is based on nearest

neighbor classification, combined with a threshold criterion. This method satisfies the constraints discussed above, where no a priori knowledge or model is used. The initial clusters are generated based on the color feature vector [in the case of Obrador and Khan, the "color feature vector" would refer to the "audio feature vector"] of the shots [audio tracks]. Each initial cluster is specified by a feature vector which is the mean of the color feature vectors [audio feature vectors] of its members. When a new shot [audio track] is available, the city block distance between its color feature vector [audio feature vector] and the means or feature vectors of the existing clusters is computed. The new shot [audio track] is grouped into the cluster with the minimum distance from its feature vector, provided the minimum distance is less than a threshold. If an existing cluster is found for the new shot [audio track], the mean (feature vector) of the cluster is updated to include the feature vector of the new shot [audio track]. Otherwise, a new cluster is created with the feature vector of the new shot [audio track] as its mean. The threshold is selected based on the percentage of the image pixels [e.g., audio samples] that need to match in color [audio feature], in order to call two images [audio tracks] similar," Column 10 Lines 35 – 53 and Figure 11. Liou further states, "Other features may also be used to produce the clusters, including audio similarity," Column 11 Lines 1 – 5.

Therefore, as seen above as indicated by the bracketed text added by the Examiner, it would have been obvious to one of ordinary skill in the art of clustering at the time of the invention to incorporate the teachings of Liou regarding the claimed determining that dissimilarity between the newly added track and existing clusters,

according to said characteristic parameters used for classification, reaches at least a defined minimum level; upon said determining, automatically creating a new cluster; assigning the new audio track to said new cluster, classifying the audio tracks into the groups or clusters, including the second cluster, thus motivating one of ordinary skill in the art to look elsewhere for such a teaching in order to realize the invention, in the invention of Obrador and Khan thereby providing a teaching for adding new audio tracks in a suitable manner in order to organize the growing collection of Obrador and Khan, since as stated by Liou, "Other features may also be used to produce the clusters, including audio similarity," Column 11 Lines 1 – 5.

Claim 2: Obrador, Khan, and Liou disclose the method according to claim 1, wherein said characteristic parameters used for classification of audio content comprise one or more audio descriptors, the audio descriptors being either physical features, or perceptual features, or psychological or social features of the audio content ("The metadata similarity may correspond to low-level features (e.g., motion activity, texture or color content, and audio content) or high-level features (e.g., meta data, such as keywords and names; objects, such as persons, places and structures; and time-related information, such as playback length and media object creation date). One or more known media object processing techniques (e.g., pattern recognition techniques, voice recognition techniques," Obrador Column 9 Lines 53 – 67)

Claim 4: Obrador, Khan, and Liou disclose the method according to claim 1, wherein the audio tracks within a cluster have variable order, so that the user listens to a randomly selected track when having selected a cluster, with said track belonging to said cluster (variable based on similarity, Obrador).

Claim 5: Obrador, Khan, and Liou disclose the method according to claim 1, wherein a user can modify the result of automatic classification of audio tracks (e.g., by choosing a different anchor, Obrador).

Claim 6: Obrador, Khan, and Liou disclose the method according to claim 1, wherein a user can modify the classification rules for automatic classification of audio tracks (e.g., by choosing a different anchor, Obrador).

Claim 7: Obrador, Khan, and Liou disclose the method according to claim 1, wherein the actual audio data are clustered within said storage means according to said menu ("The media file and the media objects preferably are presented to the user through multimedia album page, which is a windows-based GUI that is displayed on a display monitor 42 (Fig. 2)," Obrador Column 8 Lines 3 – 7).

Claim 8: Obrador, Khan, and Liou disclose the method according to claim 1, wherein the audio extract is a sample from the audio track ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each

data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Obrador Column 7 Lines 46 – 50).

Claim 9: Obrador, Khan, and Liou disclose the method according to claim 1, wherein audio extracts are created additionally for audio tracks not being representatives of clusters ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Obrador Column 7 Lines 46 – 50).

Claim 10: Obrador, Khan, and Liou disclose the method according to claim 1, wherein the length of audio extracts is not predetermined ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Obrador Column 7 Lines 46 – 50.

Claim 12: Obrador, Khan, and Liou disclose the method according to claim 1, wherein said menu is hierarchical, such that a cluster may contain one or more subclusters (see "Browsing a Media Object Cluster Hierarchy," Obrador Column 9).

Claim 13: Obrador, Khan, and Liou disclose the method according to claim 1, wherein the classification rules are modified automatically if a defined precondition is detected, and a reclassification may be performed (e.g., by choosing a different anchor, Obrador).

Claim 20: Obrador, Khan, and Liou disclose the method according to claim 1, further comprising the steps of:

selecting automatically a second audio track being a representative for the first cluster, wherein the medoid of the new cluster is selected (Since "objects are grouped into clusters, each of which preferably contains a fixed number of media objects," there must be the creation of new clusters when the collection grows in number and diversity, and therefore the system selects a media object corresponding to "the centroid or some other statistically-weighted average of a selected cluster of the ordered media objects," Obrador Column 10 Lines 18 – 39);

automatically generating a reproducible new audio extract from the second audio track; and associating said new audio extract of the second audio track as representative of the first cluster to the menu list ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence," Obrador Column 7 Lines 46 – 50 also "The media file and the media objects preferably are presented to the user through multimedia album page, which is a windows-based GUI that is displayed on a display monitor 42 (Fig. 2)," Obrador Column 8 Lines 3 – 7).

Claim 26: Obrador, Khan, and Liou disclose the method according to claim 20, wherein another audio track was a representative of the first cluster before the new audio track was added, and said first audio track being representative of the first cluster is different from the other audio track that was representative of the first cluster before the new audio track was added ("For example, the media objects may be ordered in accordance with a selected context criterion, and the representative media object may correspond to the centroid or some other statistically-weighted average of a selected cluster of the ordered media objects," Obrador Column 10 Lines 35 – 39, and "Update Cluster Mean", "Recompute Cluster Mean", Liou Figure 11).

Claims 16 – 18 are substantially similar in scope to claim 1 and is also disclosed in Figure 2, and therefore is rejected for the same reasons as claim 1 with addition of Figure 2.

Claim 19: Obrador, Khan, and Liou disclose the method according to claim 1, wherein the audio extract is an audio sequence being synthesized from the actual audio track rather than being an original sample ("Media objects 98 may be indexed with logical links into the set of data structure sequences, as shown in Fig. 8A. Each data structures sequence link into a media file may be identify a starting point in the media file and the length of the corresponding sequence. The data structure sequences may be

consecutive, as shown in FIG. 8B, or non-consecutive," Obrador Column 7 Lines 46 – 55, and therefore a non-original sample sequence.

Claim 23 is substantially similar in scope to claim 20 and therefore is rejected for the same reasons.

7. Claims 3, 11, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador, Khan, and Liou in view of Platt (US 6,987,221), hereinafter Platt.

Claim 3: Obrador, Khan, and Liou disclose the method according to claim 1, but do not disclose whether or not an audio track can be classified into more than one cluster. Platt discloses a similar clustering technique for audio and while not explicitly stated teaches, the tracks are placed in the playlist based upon the results of a vector which is based upon multiple attributes of the item (Column 10 Lines 9 – 48). Therefore, it would have been obvious to one of ordinary skill in the art that when generating multiple playlists as disclosed by Platt that the system of Platt may decide that a song may have the minimum required attributes necessary to match more than one playlist category and therefore be classified in more than one playlist. Since excluding songs from being in more than one playlist would be disadvantages to the user, since the user wants the best matching songs in each playlist. Therefore, when applying a similar technique in Obrador, Khan, and Liou, it would have been obvious to one of ordinary skill in the art at the time of the invention to generate clusters in a similar manner.

Claim 27: Obrador, Khan, Liou, and Platt disclose the method according to claim 3, wherein a track is classified into two clusters and both clusters contain a link to said track ("link", "pointer", Obrador Column 6 Lines 39 – 47) and wherein the track is stored only once ("all media files in a selected collection are stored only once in data base 96 (FIG. 7B)," Obrador Column 7 Lines 40 – 45).

Claim 11: Obrador, Khan, and Liou disclose the method according to claim 1, but do disclose wherein one of said clusters has no representative track. Platt discloses a similar clustering technique for audio and while not explicitly stated teaches how to determine the order among seed items when more than one seed item is selected. And therefore while one of ordinary skill in the art may consider any one of the seed items in this case to be the representative track, it would also have been obvious to one of ordinary skill in the art at the time of the invention that a representative track does not exist since a determination cannot be made among seed items. Therefore, when applying a similar technique in Obrador, Khan, and Liou, it would have been obvious to one of ordinary skill in the art at the time of the invention to generate clusters in a similar manner.

8. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador, Khan, and Liou in view of Mercer et al. (US 7,043,477), hereinafter Mercer.

Claims 14 and 15: Obrador discloses the method according to claim 13, but do not disclose wherein said precondition comprises that the difference between the number of tracks in a cluster and the number of tracks in another cluster reaches a maximum limit value, and wherein said precondition comprises that all stored tracks were classified into one cluster, and the total number of tracks reaches a maximum limit value. Mercer discloses where bounds are set when determining the size of playlists (Column 8 Line 40 – Column 9 Line 62). Therefore, it would have been obvious to one of ordinary skill in the art given the teaching of Mercer to incorporate a limit between two playlists or a single sequence in the invention of Obrador, Khan, and Liou to determine how classification is performed, thereby allowing for example "If composer information is available for some of the selected media files (e.g., "if greater than twenty-five percent), the authoring software creates a menu 'Composer' …" thereby further automating the classification process, Mercer Column 9 Lines 22 – 27.

9. Claims 21, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obrador, Khan, and Liou in view of Robinson (US 7,072,846 B1), hereinafter Robinson, with further support from Ferhatosmanoglu et al. (Approximate Nearest Neighbor Searching in Multimedia Databases), hereinafter Ferhatosmanoglu.

Claim 21: Obrador, Khan, and Liou disclose the method according to claim 1 but do not disclose wherein the step of assigning one or more of the audio tracks of said first cluster to the new second cluster to the new cluster uses the K-means algorithm to

decide which audio tracks are assigned to the second cluster. Robinson discloses a similar method and system for clustering songs and recommending the best song in the cluster to the user, Column 13 Lines 46 - 54. Robinson also teaches setting "the average number of songs desired per cluster," Column 4 Lines 65 – 67, similar to Obrador's teaching of fixing the number of media objects in a cluster. Robinson further explains, "As new songs are added to the system, new clusters are automatically created such that the average number of songs remains approximately the same; the optimization process then populates the cluster. These clusters, in various embodiments, may start out empty before they are optimized, or may be initially populated with new songs or randomly chosen songs," Column 4 Line 67 – Column 5 Line 7. Robinson also teaches that a wide range of clustering approaches fall within the scope of the invention and gives provides source code for the standard k-means clustering concept as an example. To further support the technique of Robinson, Ferhatosmanoglu teaches the "k-means algorithm [13] iteratively constructs a number of clusters with a representative for each cluster such that the error in representation is minimized," Page 506 Column 2. Ferhatosmanoglu like Obrador and Robinson also teaches the clustering algorithm limits "the size of each cluster from both above and below," Page 507 Column 1. Ferhatosmanoglu explains, "If the size goes above the upper threshold, the cluster is split into two. If the size goes down below the lower threshold, then the cluster centroid is erased from the list of centroids. To split a cluster, we first duplicate the cluster centroid, and then perturb the exact copies randomly. It is known that K-means algorithm is sensitive to initialization. Since we have this splitting

mechanism, instead of starting from cluster centroids chosen by some pre-processing scheme, we start by a single cluster, and the algorithm automatically creates new clusters until the population of each cluster is below the threshold. As we will demonstrate later, by having a lower threshold for cluster size, several queries can be answered by retrieving only a very small number of clusters. Also, by limiting the cluster sizes from above, we avoid extremely unbalanced distribution of data over the clusters. Although the minimum and maximum cluster sizes are not dominant factors in the performance of our technique, reasonable values need to be set for the design purposes. Therefore, given the teachings of Robinson and Ferhatosmanoglu, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the k-means algorithm as suggested by Robinson and further explained by Ferhatosmanoglu with limits placed on the size of the clusters when adding new songs to a collection in the invention of Obrador, Khan, and Liou, thereby realizing the aforementioned advantages while fixing the number of media objects in a cluster that may be conveniently presented to a user at the same time (Obrador Column 10 Lines 23 – 27).

Claim 22: Obrador, Khan, Liou but do not disclose the method according to claim 1 but do not disclose wherein the minimum level to which the detected number of tracks within said first cluster is compared depends on the number of tracks in other existing clusters. Robinson discloses a similar method and system for clustering songs and recommending the best song in the cluster to the user, Column 13 Lines 46 - 54.

Robinson also teaches setting "the average number of songs desired per cluster," Column 4 Lines 65 – 67, similar to Obrador's teaching of fixing the number of media objects in a cluster. Robinson further explains, "As new songs are added to the system, new clusters are automatically created such that the average number of songs remains approximately the same; the optimization process then populates the cluster. These clusters, in various embodiments, may start out empty before they are optimized, or may be initially populated with new songs or randomly chosen songs," Column 4 Line 67 – Column 5 Line 7. Robinson also teaches that a wide range of clustering approaches fall within the scope of the invention and gives provides source code for the standard k-means clustering concept as an example. To further support the technique of Robinson, Ferhatosmanoglu teaches the "k-means algorithm [13] iteratively constructs a number of clusters with a representative for each cluster such that the error in representation is minimized," Page 506 Column 2. Ferhatosmanoglu like Obrador and Robinson also teaches the clustering algorithm limits "the size of each cluster from both above and below," Page 507 Column 1. Ferhatosmanoglu explains, "If the size goes above the upper threshold, the cluster is split into two. If the size goes down below the lower threshold, then the cluster centroid is erased from the list of centroids. To split a cluster, we first duplicate the cluster centroid, and then perturb the exact copies randomly. It is known that K-means algorithm is sensitive to initialization. Since we have this splitting mechanism, instead of starting from cluster centroids chosen by some pre-processing scheme, we start by a single cluster, and the algorithm automatically creates new clusters until the population of each cluster is below the threshold. As we will

demonstrate later, by having a lower threshold for cluster size, several queries can be answered by retrieving only a very small number of clusters. Also, by limiting the cluster sizes from above, we avoid extremely unbalanced distribution of data over the clusters. Although the minimum and maximum cluster sizes are not dominant factors in the performance of our technique, reasonable values need to be set for the design purposes. Therefore, given the teachings of Robinson and Ferhatosmanoglu, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the k-means algorithm as suggested by Robinson and further explained by Ferhatosmanoglu with limits placed on the size of the clusters when adding new songs to a collection in the invention of Obrador, Khan, and Liou, thereby realizing the aforementioned advantages while fixing the number of media objects in a cluster that may be conveniently presented to a user at the same time (Obrador Column 10 Lines 23 – 27).

Claims 24 and 25 are substantially similar in scope to claims 21 and 22, respectfully, and therefore are rejected for the same reasons.

Response to Arguments

10. Applicant's arguments with respect to claims 1 – 27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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